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ILLINOIS  
NATURAL  
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SURVEY



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Federal Aid Project  
Number W-112-R-12  
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Sport Fish & Wildlife Restoration  
Program

# Hunter Perceptions of Chronic Wasting Disease in Illinois



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June 30, 2003

# **HUNTER PERCEPTIONS OF CHRONIC WASTING DISEASE IN ILLINOIS**

**JOB COMPLETION REPORT**

**WILDLIFE HARVEST AND  
HUMAN DIMENSIONS RESEARCH PROGRAM**

**STATE OF ILLINOIS**

**PROJECT NUMBER: W-112-R-12  
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Federal Aid in Wildlife Restoration  
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## **Abstract**

A study of 2,683 (79% response) Illinois deer hunters' attitudes toward and understanding of Chronic Wasting Disease (CWD) in white-tailed deer in Illinois was conducted during spring 2003. Most hunters (96%) were aware of CWD, but fewer could state they were aware of CWD in a particular state, including Illinois (77%). Higher risk ratings were given to West Nile Disease (7%), Lyme Disease (5%), or having a heart attack while hunting (5%) than CWD (3%). Hunters did perceive CWD to be a threat to the Illinois deer herd (33% were "very concerned"). Most hunters (63%) did not foresee any change in their hunting participation for the 2003 firearm season due to CWD, 15% planned to make sure they were hunting deer in a CWD-free county. A majority of hunters (54%) expressed a degree of uncertainty as to the potential risk of CWD to humans, and 18% felt it could be contracted by eating meat from infected animals. Hunters expressed potential changes in behavior with increased infection rates of CWD in deer in the county where they hunted. Based on the responses to this study, approximately 5% of hunters can be expected to drop out of deer hunting if CWD is found in the county next to or in the county where they hunt.

## **Methods**

Data were obtained through a mail-back survey conducted March through May, 2003 of a randomly selected sample of deer hunters in Illinois. The sample of hunters was stratified by permit type: 2,000 firearm, 1,000 archery, and 500 muzzleloader deer hunters were selected. Firearm and muzzleloader deer hunters were sampled by county for which they held a permit; archery deer hunters were selected by the county in which they resided. Each participant was mailed a 15-page questionnaire, cover letter, and stamped return envelope. Nonrespondents were mailed a postcard reminder 10 days following the questionnaire. A total of 3 mailings of the questionnaire was conducted. We received a total of 2,683 (79%) responses.

Data were analyzed for frequency of response by all hunters to CWD-related variables. Following general frequency analyses, responses were stratified by county in which each hunter hunted. Tables segmented by regions show the region in which the

hunters hunted during the 2002 Illinois firearm deer season. All analyses were tested for group effect to account for differences in number of hunters in the 5 IDNR regions. A second stratification was undertaken, whereby counties in which hunters hunted were coded to denote the county as: 1) CWD county (Boone, McHenry, and Winnebago), 2) adjacent (i.e., shared boundary) to a CWD county, 3) 2 counties removed from a CWD county (i.e. shared boundary with a county adjacent to a CWD county), and 4) all other counties. Analyses comparing CWD counties to other counties were weighted by county to account for disproportionate representation of hunters in non-CWD counties.

## **Results**

### ***Hunter Participation***

Most hunters (89%) reported they participated in the 2002 Illinois firearm deer season, whereas 61% hunted during the archery, 20% during muzzleloader, and 11% during handgun seasons. Statewide, 89% of respondents hunted during the 2002 firearm deer season, whereas 14% of hunters in the CWD counties reported they did not hunt during the 2002 firearm season.

### ***Awareness of CWD***

Almost all hunters (96%) were aware of Chronic Wasting Disease (CWD) in deer (Figure 1). Hunters differed in awareness by state in which CWD occurred (Figure 2). Of the 2,564 hunters who reported they were aware of CWD, more (79%) had heard of CWD in Wisconsin than Illinois (77%). Less than half (46%) of hunters reported they had heard of CWD in states other than Illinois or Wisconsin. Sources of information for CWD cited most frequently by hunters included newspapers (73%), magazines (69%), and television news (61%) (Table 1). A minority of hunters reported using the Internet (19%), club newsletters (13%), or hearing CWD discussed at club meetings (10%).

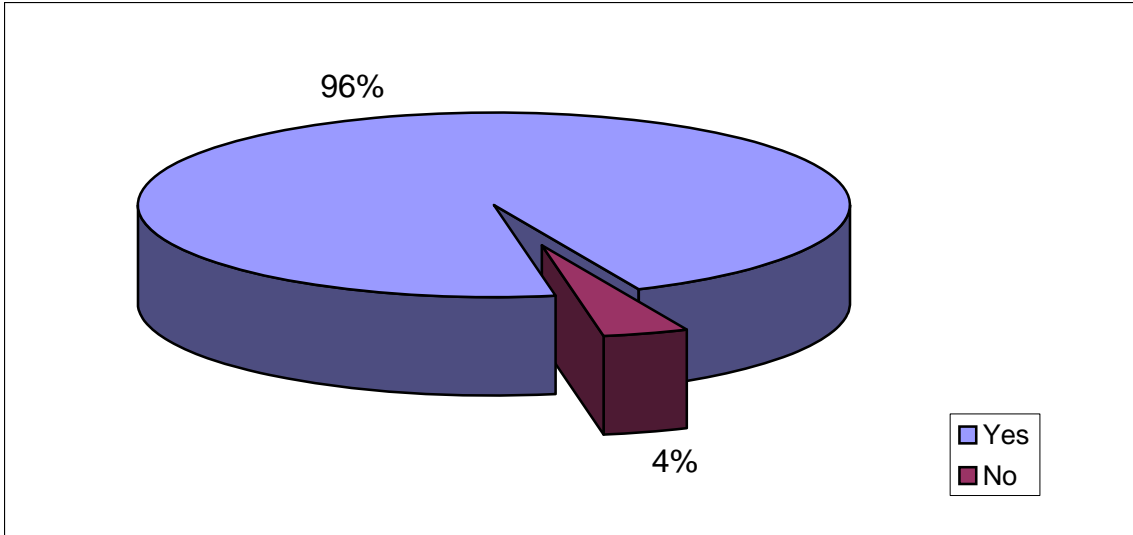


Figure 1. Illinois deer hunter awareness of CWD.

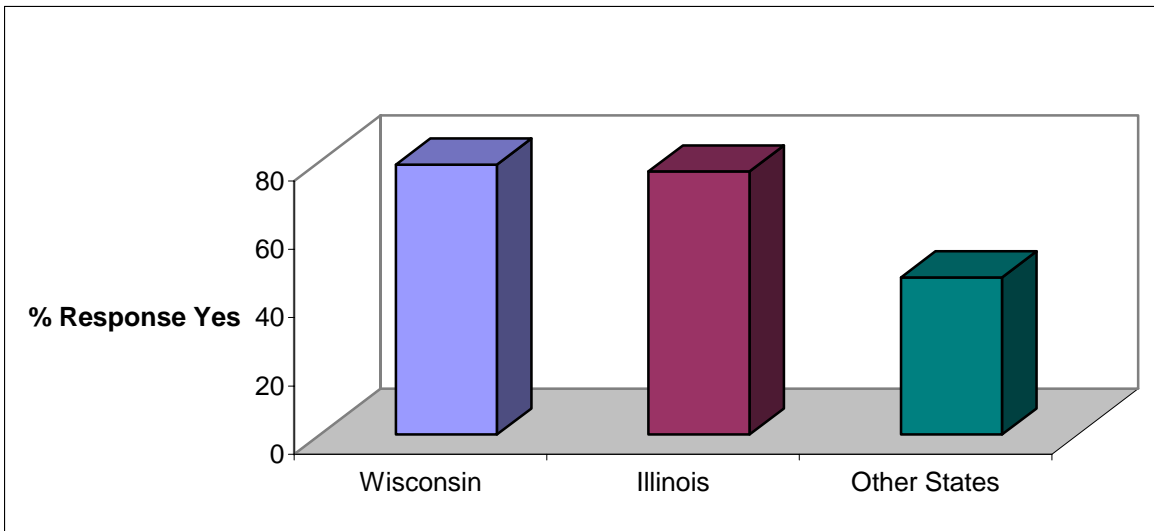


Figure 2. Illinois deer hunter awareness of CWD by state (N = 2564)

Table 1. Sources of information regarding CWD for Illinois deer hunters.

How did you hear about CWD?	Percent Response <sup>a</sup>	Number of Respondents
Newspapers	73%	1854
Magazines	69	1764
Television news	61	1548
Friends or relatives	57	1464
Radio	28	727
Television program	26	669
Internet	19	482
Hunting or sportsman’s club newsletter	13	340
Hunting or sportsman’s club meeting	10	256
Other	5	130

<sup>a</sup> Percentages equal more than 100 because respondents could choose more than one answer.

***Perceived risks of CWD***

Hunters statewide did not perceive great risk of contracting CWD relative to other risk factors presented (Table 2). Perceived risks were greater for West Nile Disease (7% “High” risk, 27% “Moderate”) and Lyme disease (5% “High,” 33% “Moderate”) than for CWD (3% “High,” 12% “Moderate”). More hunters (12%) were undecided about how they perceived the risk of CWD than any of the other risk factors presented. More hunters (6%) in IDNR Administrative Region 2 perceived CWD to be a high risk to deer hunters than other regions, and more hunters in Region 3 (16%) were undecided as to the risk of CWD than hunters from the other administrative regions (Table 3). When stratified by counties relative to CWD, hunters perceived West Nile Virus to be of greater threat than CWD (Figure 3).

Table 2. Perceived risk of CWD relative to other known threats.

Please give your opinion of the risk of the following:	No Risk	Slight Risk	Moderate Risk	High Risk	Undecided
Becoming ill from CWD	27%	47%	12%	3%	12%
Contracting Lyme Disease	5	54	33	5	3
Having a heart attack while hunting	19	46	27	5	2
Being involved in a vehicle accident while traveling to hunt	13	54	26	4	2
Contracting Rabies	42	50	4	<1	2
Contracting West Nile Disease	12	50	27	7	3

Table 3. Perceived risk of contracting CWD among Illinois deer hunters, by IDNR region hunted.

	No Risk (%)	Slight Risk (%)	Moderate Risk (%)	High Risk (%)	Undecided (%)
Region 1	28	48	12	2	10
Region 2	28	45	13	6	8
Region 3	23	47	13	2	16
Region 4	28	49	10	3	10
Region 5	27	45	13	2	14
Total	27	47	12	3	12

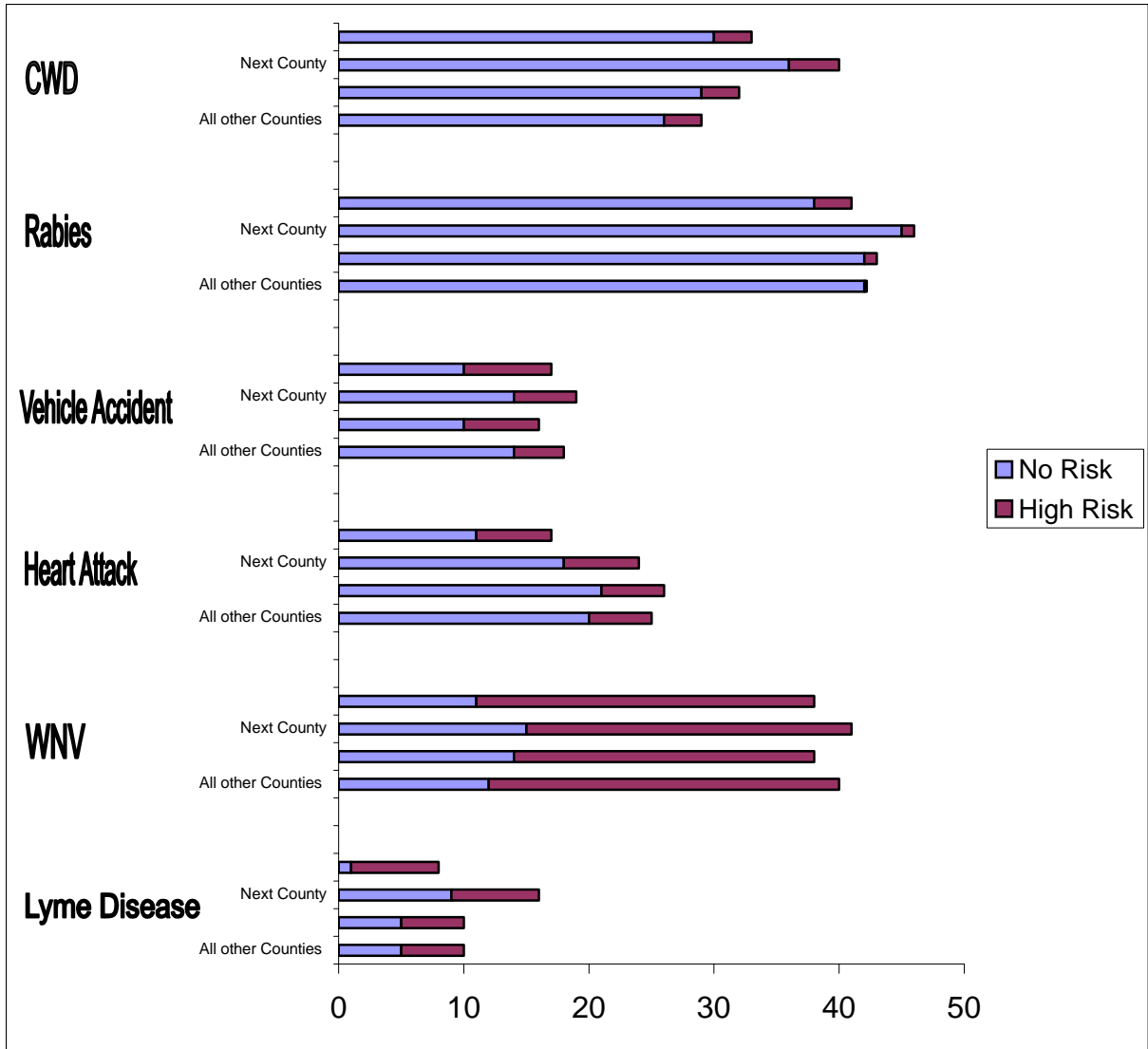


Figure 3. Perceived risk of CWD relative to other risk factors by county hunted. (Note: Figure depicts “No Risk” and “High Risk” categories only, and does not show “Low Risk” or “Moderate Risk” categories.)

Of the list of potential risks to the deer herd in Illinois, CWD was perceived as the second-greatest threat after “Loss of habitat to housing or commercial development,” and was perceived about as serious as “Loss of habitat to agriculture” (Table 4). Risk to the deer herd was viewed highest among hunters in Region 2 (47%), followed by hunters in Region 3 (37%) and Region 1 (36%) (Table 5). Few hunters (4%) were undecided about their perceptions of risk CWD posed to the deer herd in Illinois.



Table 4. Perceived risks to deer herd in Illinois.

“Please indicate your concern of impact on the deer herd in Illinois due to the following factors.”	Not Concerned (%)	Slightly Concerned (%)	Moderately Concerned (%)	Very Concerned (%)	Undecided (%)
Decrease due to CWD	10	28	26	33	3
Loss of habitat to housing or commercial developments	7	15	24	53	1
Decrease from West Nile Disease	19	36	26	14	5
Overharvest of trophy bucks	24	26	25	23	3
Loss of habitat to agriculture	21	23	23	32	2

Table 5. Perceptions of risk from CWD to deer herd among Illinois deer hunters, by IDNR region hunted.

	No Risk (%)	Slight Risk (%)	Moderate Risk (%)	High Risk (%)	Undecided (%)
Region 1	10	28	25	36	2
Region 2	14	21	18	47	1
Region 3	9	25	25	37	4
Region 4	11	28	27	31	4
Region 5	8	32	25	31	4
Total	10	28	25	34	3

A majority of hunters (54%) believed that “CWD poses some risk to humans, but not enough is known to be sure.” This response indicates a degree of uncertainty on the part of hunters in their perceptions surrounding the risk of humans contracting CWD (Figure 4). Little difference in the uncertainty was found among hunters in the 5 regions (Table 6). Less than 1 out of 5 hunters felt that CWD was a risk to deer only. A minority of hunters (17%) believed CWD could potentially infect humans who ate meat from infected animals, however the proportion was higher in Region 3 (19%) and Region 5 (19%). The lowest responses from hunters was in response to the statement that the threat of CWD had been exaggerated, as approximately 1 out of 10 hunters felt the threat of CWD had been exaggerated.

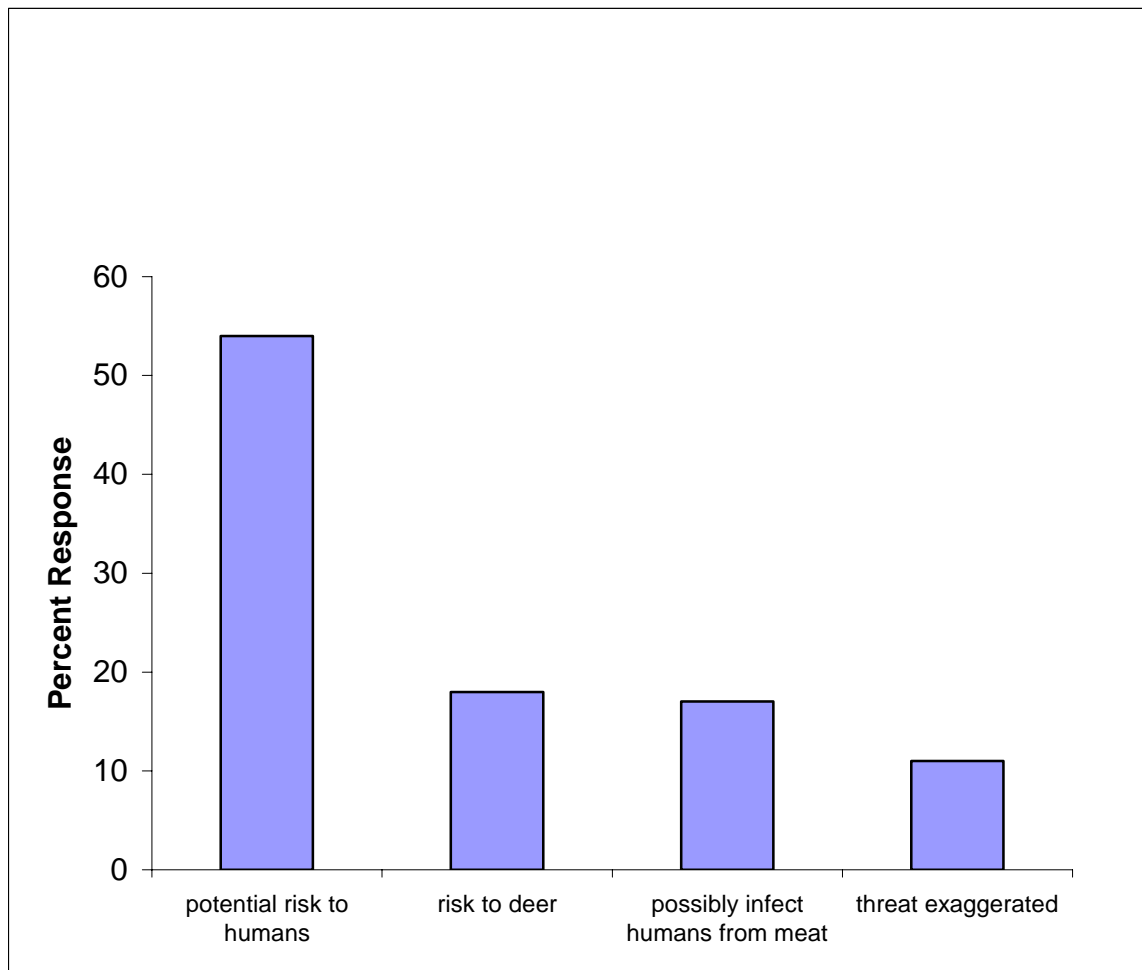


Figure 4. Perceptions of CWD risks by Illinois hunters.

Table 6. Perceived threat of CWD by Illinois deer hunters, by IDNR region hunted.

“Which of the following describes your opinion of CWD?”	Threat of CWD exaggerated (%)	CWD risk to deer, not to humans (%)	CWD may be risk to humans, but not enough known to be sure (%)	CWD can possibly infect human if they eat meat from infected deer (%)
Region 1	13	17	54	16
Region 2	12	18	53	17
Region 3	12	16	52	19
Region 4	10	21	54	15
Region 5	10	17	53	19
Statewide	11	18	54	17

### *Behavioral changes due to CWD*

Little effect on hunter behavior during the 2002 Illinois firearm deer season was reported statewide due to the discovery of CWD in Illinois (Figure 5). Most hunters (82%) reported they hunted as usual. On a regional basis, most hunters reported that the presence of CWD had no effect on their hunting during the 2002 firearm season (Table 7). Fewer hunters in Region 2 (72%) reported they hunted the same as past season compared to other regions, however more hunters (14%) reported they hunted more than in the other regions. A higher percentage of hunters in Region 2 (7%) reported they hunted less due to CWD than hunters in other regions. Differences in hunter behaviors due to CWD were statistically significant across the 5 regions. Hunter responses by the relationship of the county they hunted relative to CWD showed similar results as regions: a higher percentage hunters in CWD counties (7%) reported hunting less due to CWD than other counties (Table 8). Differences in responses to the presence of CWD on hunting activities during the 2002 firearm season were significant across the CWD county classifications.

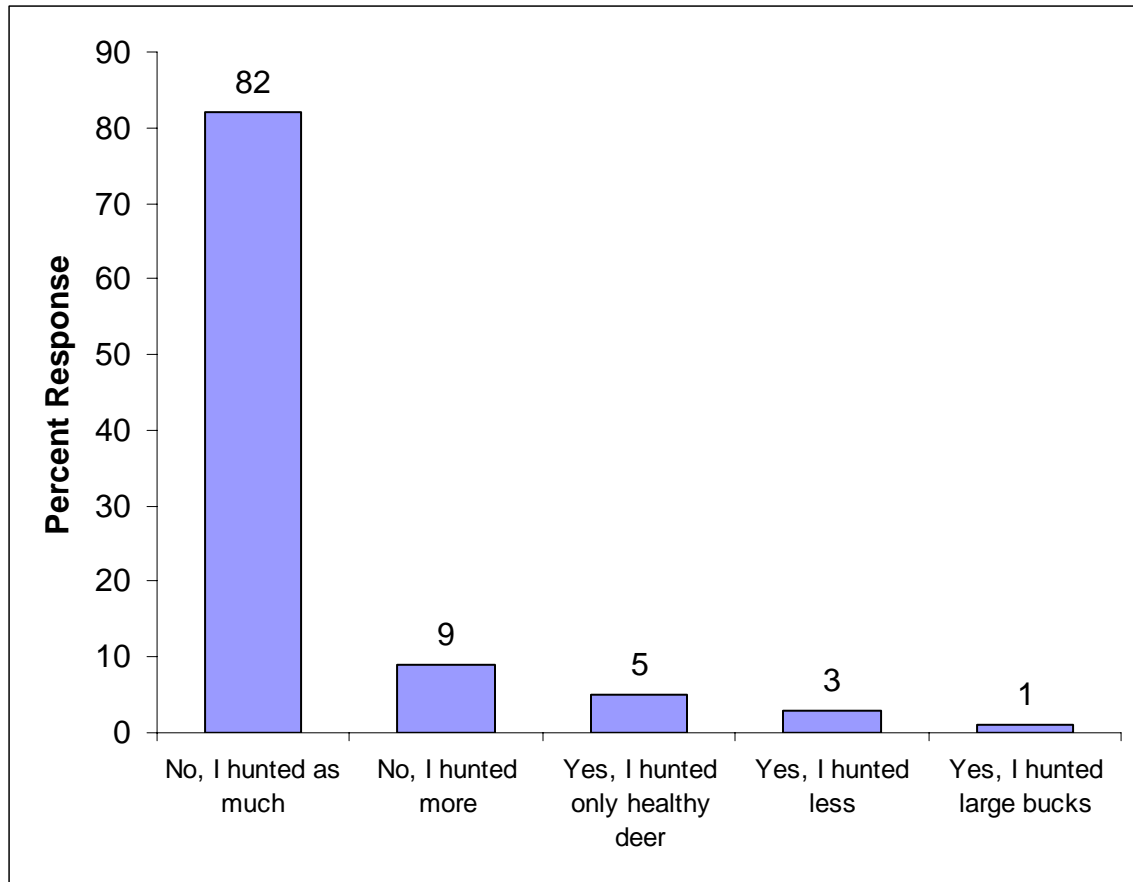


Figure 5. Reported changes in hunter behavior due to CWD in Illinois.

Table 7. Affect of CWD on hunter behavior during 2002 firearm deer season in Illinois, by IDNR region hunted. ( $\chi^2 = 38.04, p < 0.001$ )

“Did discovery of CWD in Illinois change your hunting during the 2002 firearm season?”	Hunted More (%)	Hunted Same (%)	Hunted Less (%)	Hunted healthy deer (%)	Hunted large bucks (%)
Region 1	9	82	2	6	1
Region 2	14	72	7	6	1
Region 3	8	83	3	6	1
Region 4	10	83	2	4	1
Region 5	10	83	1	5	1
Statewide	9	82	2	5	1

Table 8. Affect of CWD on hunter behavior during 2002 firearm deer season in Illinois, by relation to CWD counties. ( $\chi^2 = 68.08, p < 0.001$ )

“Did discovery of CWD in Illinois change your hunting during the 2002 firearm season?”	Hunted More (%)	Hunted Same (%)	Hunted Less (%)	Hunted healthy deer (%)	Hunted large bucks (%)
CWD Counties	4	77	7	9	3
Counties next to CWD counties	10	80	0	6	4
2 counties from CWD counties	11	82	4	4	0
All other counties	9	82	2	5	1
Total	9	82	3	6	1

Most hunters (63%) responded that they did not anticipate any change in their hunting behavior during the upcoming 2003 Illinois deer seasons (Table 9). Of the changes hunters did anticipate making, 21% reported they would “Check how the deer was acting,” 15% would “Hunt in CWD-free areas,” and approximately 2% would either not hunt or hunt a different location. A higher proportion of hunters (7%) in the CWD counties indicated they would not hunt during the 2003 deer season compared to 2% of hunters statewide. Significant differences in planned behavior was found by region (Table 10). More hunters (6%) in Region 2 responded they were more likely to stop hunting due to the presence of CWD than did hunters in all other regions. Region 2 hunters also reported the lowest percentage (51%) that planned no change in their hunting behavior for the up-coming 2003 firearm deer season. Responses by relationship of county hunted to CWD showed a higher percentage of hunters (7%) were considering not hunting during the 2003 firearm deer season due to the presence of CWD (Table 11). Fewer hunters (10%) from CWD counties would consider hunting CWD-free counties than hunters from other county categories. The percentage of hunters from CWD counties (63%) that would not plan to make any changes in their hunting activities for the 2003 season was essentially the same as the percentage statewide (62%).

Table 9. Potential changes in hunter behavior during 2003 Illinois deer seasons due to CWD

“Do you think the presence of CWD will make changes in your hunting during the 2003 firearm deer season?”	Percent Response	N
No change	63%	1651
Check how deer was acting	21	552
Hunt in CWD-free areas	15	394
Consider not hunting	1	31
Hunt different location	<1	10

Table 10. Anticipated changes in hunting behavior for 2003 Illinois firearm deer season given CWD, by IDNR region hunted. ( $\chi^2 = 113.75, p < 0.001$ )

“Do you think the presence of CWD will make changes in your hunting during 2003 season?”	No Change (%)	Check how deer was acting (%)	Hunt different location (%)	Hunt CWD-free areas (%)	Consider not hunting (%)
Region 1	60	22	1	16	1
Region 2	51	25	1	17	6
Region 3	63	20	<1	16	1
Region 4	65	20	<1	14	1
Region 5	64	21	1	14	1
Statewide	63	21	<1	15	1

Table 11. Anticipated changes in hunting behavior for 2003 Illinois firearm deer season given CWD, by relation to CWD counties. ( $\chi^2 = 109.62, p < 0.001$ )

“Do you think the presence of CWD will make changes in your hunting during 2003 season?”	No Change (%)	Check how deer was acting (%)	Hunt different location (%)	Hunt CWD-free areas (%)	Consider not hunting (%)
CWD Counties	63	21	<1	10	7
Counties next to CWD counties	53	27	<1	17	0
2 counties from CWD counties	61	17	3	21	1
All other counties	63	21	0	15	1
Total	62	21	<1	15	1

If hunters were to change from hunting their usual location due to CWD, the most frequent response from all hunters was to move to a county that was free of CWD (Figure 6). Of the other options for behavioral changes listed, 18% of hunters reported they would “Skip deer hunting until CWD was eradicated in the county were I hunt,” 16% would “Hunt other game,” and 13% would “Skip hunting for that season only.” Hunters in Region 2 (55%) felt they would be more likely to hunt in a CWD-free county than other hunters in other regions (Table 12). Hunters in Region 3 responded they would stop hunting until CWD was eradicated in the county where they hunted. When these same options were examined by counties hunted relative to the presence of CWD, significant differences were noted in responses. A larger percentage of hunters in CWD counties (8%) responded they would stop hunting due to CWD compared to 4% statewide. Given options for substitutions to deer hunting, twice as many hunters in CWD counties (8%) reported they would stop hunting altogether compared to the statewide response (4%) (Table 13). These same hunters were less likely to stop hunting until CWD was eradicated than hunters from other county classifications.

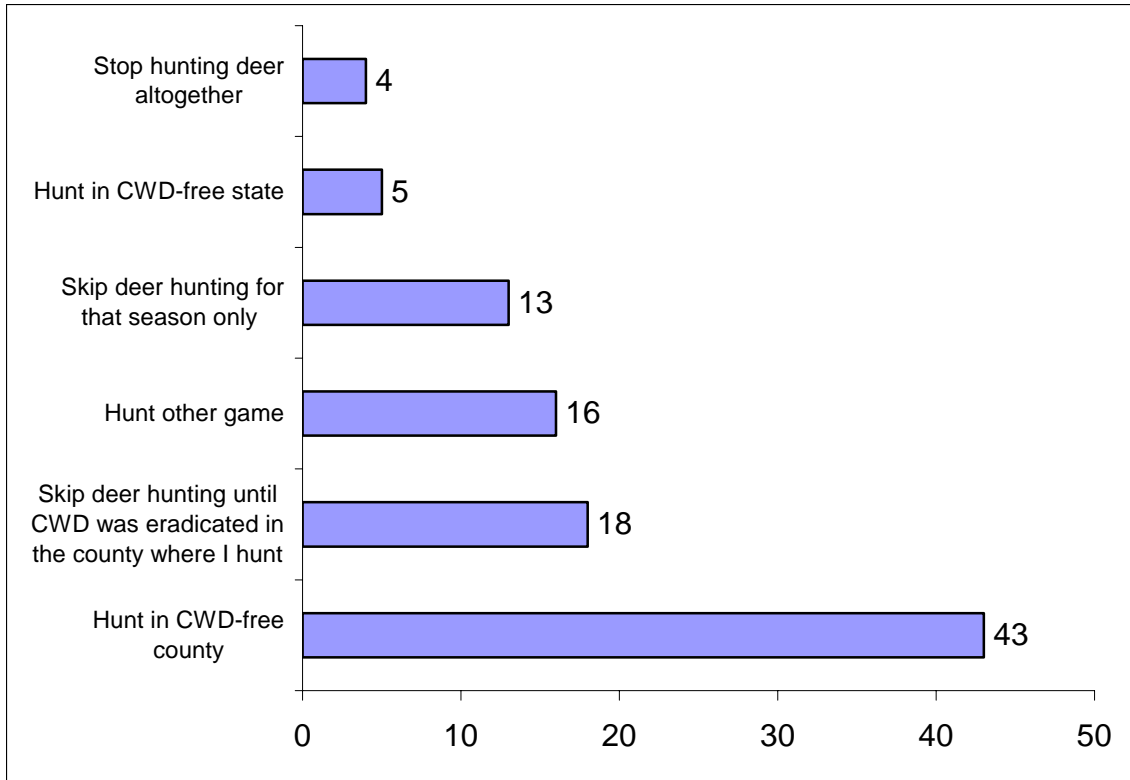


Figure 6. Reported changes in hunting behavior among Illinois hunters who would not hunt usual location due to CWD.

Table 12. Alternatives to deer hunting due to CWD among Illinois hunters, by IDNR region hunted. ( $\chi^2 = 62.56, p < 0.001$ )

“If you decide not to hunt deer where you usually hunt due to CWD, what will you do instead?”	Hunt CWD-free county (%)	Hunt CWD-free state (%)	Hunt other game in IL (%)	Skip one season only (%)	Stop until CWD eradicated in county (%)	Stop deer hunting altogether (%)
Region 1	39	8	18	11	19	5
Region 2	55	5	13	13	9	5
Region 3	43	6	15	12	21	3
Region 4	40	4	17	16	18	6
Region 5	47	4	15	13	18	3
Statewide	43	5	16	13	18	4



Table 13. Alternatives to deer hunting due to CWD among Illinois hunters, by proximity to CWD counties. ( $\chi^2 = 87.90, p < 0.001$ )

“If you decide not to hunt deer due to CWD, what will you do instead?”	Hunt CWD-free county (%)	Hunt CWD-free state (%)	Hunt other game in IL (%)	Skip one season only (%)	Stop until CWD eradicated in county (%)	Stop deer hunting altogether (%)
CWD Counties	44	10	19	12	8	8
Counties next to CWD counties	47	16	9	5	19	4
2 counties from CWD counties	51	7	12	15	11	5
All other counties	42	5	16	13	19	4
Statewide	44	6	16	13	17	4

Responses suggest more hunters would change than retain their hunting behavior following one deer testing positive to CWD in the county where they hunt. If deer testing positive for CWD were found in the county next to where hunters hunt most hunters (55%) stated they would hunt as usual, whereas 45% would change some aspect of their hunt or what they did with the meat (e.g., not feed the meat to their families or eat it themselves, only eat meat that had been tested, hunt in a different location, or not hunt). If 1 deer tested positive to CWD in the county where they hunted, most hunters (52%) would change some aspect of their hunting behavior. If ten deer tested positive 74% of hunters would exhibit some behavioral change, and 83% of hunters would change their hunting behavior if 20 deer tested positive. Behavioral changes could be expected to occur in 88% of hunters if 50 deer tested positive in the county where they hunted, and 89% of hunters would change their hunting behavior if <50 deer tested positive in the county they hunt deer (Table 14).

Table 14. Potential changes in hunter behavior by increasing level of CWD in deer.

	Hunt as usual and eat meat	Hunt as usual eat meat, but family won't	Hunt as usual, but not eat meat	Hunt as usual eat meat only if it's tested	Hunt in different county	Go out of Illinois to hunt deer	Not go deer hunting at all
CWD in next County	55%	2%	6%	26%	6%	<1%	5%
1 deer positive in unit hunted	48	3	7	30	7	<1	5
10 deer positive in unit hunted	26	3	12	37	9	3	12
20 deer positive in unit hunted	17	2	14	35	10	4	18
50 deer positive in unit hunted	12	1	15	31	9	7	25
<50 deer positive in unit hunted	11	1	14	29	9	7	29

## Conclusions

Awareness of CWD among Illinois hunters was high, as could be expected given recent local, regional, and national media attention to the issue. Hunters used conventional print and broadcast media to learn about the issue, but few (less than 20%) had used the Internet for their source of information on CWD. This low percentage for Internet use means that less than one-quarter of hunters reported they used the Illinois Department of Natural Resources website for CWD information. Low use of Internet sites suggests hunters are receiving information provided by IDNR through second or even third parties and a minority are getting their information regarding CWD directly from IDNR.

Statewide, Illinois deer hunters did not perceive Chronic Wasting Disease to be a serious threat to hunters at the time this study was undertaken, and were more concerned about the risk of West Nile Disease and Lyme Disease than the risk of CWD; however, more hunters in IDNR Region 2 rated the risk of CWD as high compared to hunters in all other regions. Respondents were concerned about the threat of CWD to the deer herd, and again, hunters in Region 2 had greater concerns than the remainder of the state. A majority of hunters felt that not enough was known of the effects of CWD on humans, and some did report that they felt CWD could be contracted by humans eating meat from infected deer. No regional effect was evident in the perceived threat of CWD by deer hunters. These responses suggest hunters are unsure of the ability of CWD to transfer across species barriers. Such concerns could prove problematic if CWD was to spread beyond current counties affected.

Most hunters did not foresee a change in their hunting behaviors for the 2003 Illinois firearm deer season, given the level of CWD at the time the study was conducted. Hunters showed an increased level of caution if CWD was found in deer in the county next to where they hunt, and a great degree of concern if a deer tested positive for CWD in the county where they hunted. A drop in approximately 5% of licenses could be expected if a deer tested positive in a given county, with a corresponding drop of an additional 5% of licenses in adjacent counties. An additional 6% of hunters may try for permits in other counties if CWD is found in the county next to the one they hunt. Overall, increasing levels of CWD will result in increased concerns and changes in behavior by Illinois hunters.

Results presented here can be considered baseline measurements if CWD expands beyond its present range in Illinois. Hunter attitudes and behaviors related to CWD should be monitored to predict changes such as decreased license sales, shifts in deer hunter efforts to other counties, and discarding animals if hunters choose to hunt but not eat the meat from deer harvested. Efforts need to be continued to inform and educate hunters about CWD. Attitudes expressed by hunters in this study could change drastically with small changes in CWD levels and in light of news stories regarding BSE, and IDNR must be responsive to such changes.